

PATENT COOPERATION TREATY

9/926585

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

To:

RUELLAN-LEMONNIER, Brigitte
Thomson multimedia
46, quai Alphonse Le Gallo
F-92648 Boulogne
FRANCE

RECEIVED

FEB 19 2002

Technology Center 2600

Date of mailing (day/month/year) 05 November 2001 (05.11.01)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference PF990030	
International application No. PCT/EP00/04053	International filing date (day/month/year) 05 May 2000 (05.05.00)

1. The following indications appeared on record concerning:

☒ the applicant
 ☐ the inventor
 ☐ the agent
 ☐ the common representative

Name and Address THOMSON MULTIMEDIA 46, quai Alphonse Le Gallo F-92100 Boulogne-Billancourt France	State of Nationality FR	State of Residence FR
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person
 ☒ the name
 ☐ the address
 ☐ the nationality
 ☐ the residence

Name and Address THOMSON LICENSING S. A. 46, Quai A. Le Gallo F-92100 Boulogne-Billancourt France	State of Nationality FR	State of Residence FR
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned
<input type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Ning XU Telephone No.: (41-22) 338.83.38
---	---

P/ ENT COOPERATION TREAT

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 16 January 2001 (16.01.01)	
International application No. PCT/EP00/04053	Applicant's or agent's file reference PF990030
International filing date (day/month/year) 05 May 2000 (05.05.00)	Priority date (day/month/year) 01 June 1999 (01.06.99)
Applicant FURON, Teddy et al	

-1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
 06 December 2000 (06.12.00)

☐ in a notice effecting later election filed with the International Bureau on:

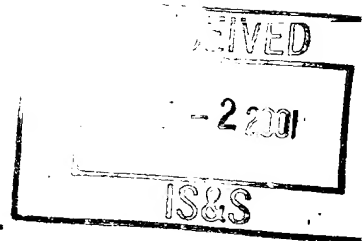
2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Pascal Piriou Telephone No.: (41-22) 338.83.38
---	---

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY



PCT

To:

RUELLAN-LEMONNIER, B.
THOMSON MULTIMEDIA
46 Quai Alphonse Le Gallo
F-92648 Boulogne Cedex
FRANCE

THOMSON multimedia RECEIVED	
07 JUN 2001	
Patent Department Administration	Date of mailing (day/month/year)

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Applicant's or agent's file reference
PF990030

IMPORTANT NOTIFICATION

International application No.
PCT/EP00/04053

International filing date (day/month/year)
05/05/2000

Priority date (day/month/year)
01/06/1999

Applicant
THOMSON MULTIMEDIA

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized officer

Schalinatus, D

Tel. +49 89 2399-8242




PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14

Applicant's or agent's file reference PF990030		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP00/04053	International filing date (day/month/year) 05/05/2000	Priority date (day/month/year) 01/06/1999	
International Patent Classification (IPC) or national classification and IPC H04N1/32			
Applicant THOMSON MULTIMEDIA			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none">I <input checked="" type="checkbox"/> Basis of the reportII <input type="checkbox"/> PriorityIII <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicabilityIV <input type="checkbox"/> Lack of unity of inventionV <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statementVI <input type="checkbox"/> Certain documents citedVII <input type="checkbox"/> Certain defects in the international applicationVIII <input checked="" type="checkbox"/> Certain observations on the international application			
Date of submission of the demand 06/12/2000		Date of completion of this report 05.06.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer Schinnerl, A Telephone No. +49 89 2399 8609	



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/04053

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):
- Description, pages:**

1-14 as originally filed

Claims, No.:

1-11 as originally filed

Drawings, sheets:

1-2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP00/04053

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 5.

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 5 are so unclear that no meaningful opinion could be formed (*specify*):
see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims 2,4,7,8,10,11

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/04053

	No:	Claims	1,3,6,9
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-11
Industrial applicability (IA)	Yes:	Claims	1-11
	No:	Claims	

2. Citations and explanations
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

Claim 5 is so unclear (see section VIII) that the scope of protection can not be determined.

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Reference is made to the following documents:

D1: EP-A-0 828 372

D2: EP-A-0 840 513

2 The subject-matter of claims 1, 3, 6 and 9 lacks novelty (Article 33(2) PCT).

2.1 The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document):

A method for inserting a watermark into data representing a content to be protected (abstract), comprising the steps of:

- a) supplying a pseudo random noise sequence to the input of a filter with predefined impulse response (column 3, line 40 - column 4, line 32; figures 1 and 3); and
- b) adding said filtered pseudo random noise sequence to said data (column 4,

lines 24-32; figure 3).

Therefore, document D1 discloses a method falling within the terms of claim 1.

The foregoing objection applies equally to the closely related apparatus claim 6.

It is noted that it appears that the subject-matter of claims 1 and 6 is also disclosed in document D2 (column 5, lines 41-46; figure 1).

- 2.2 Document D1 further discloses a method for detecting a watermark in data representing a content received (abstract), comprising the steps of
- i) performing a spectral analyses of said data (column 4, lines 33-48), and
 - ii) deducing therefrom whether said data include a pseudo noise sequence which has been filtered by a filter with a predefined spectral response (column 4, line 49 - column 5, line 4; figure 4).

Therefore, document D1 discloses a method falling within the terms of claim 3.

The foregoing objection applies equally to the closely related apparatus claim 9.

- 3 The subject-matter of claims 2, 3, 4 and 7, 8, 10 and 11 lacks an inventive step (Article 33(3) PCT).

Dependent claims 2, 4, 7, 8, 10 and 11 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, involve an inventive step because these claims concern commonplace features which can either be derived from the documents cited in the International Search Report (e.g. claims 2 and 7: D2, column 6, lines 9-12, figure 2; claim 11: figure 4) or are obvious to a skilled person.

- 4 Industrial applicability: in the field of watermarking of digital data.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP00/04053

Re Item VIII

Certain observations on the international application

Claim 5 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claim attempts to define the subject-matter in terms of the result to be achieved which merely amounts to a statement of the underlying problem. The technical apparatus features necessary for achieving this result should be added.

(19) World Intellectual Property Organization
International Bureau



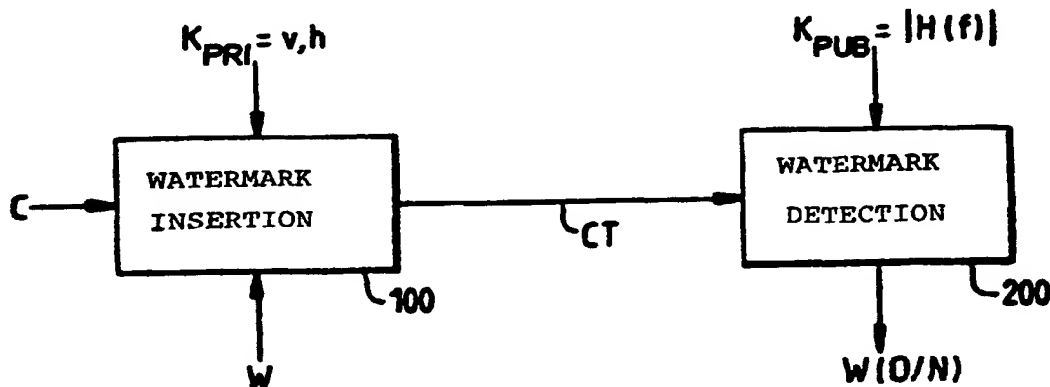
(43) International Publication Date
7 December 2000 (07.12.2000)

PCT

(10) International Publication Number
WO 00/74371 A1

- (51) International Patent Classification⁷: **H04N 1/32** (74) Agent: RUELLAN-LEMONNIER, Brigitte; Thomson multimedia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR).
- (21) International Application Number: PCT/EP00/04053
- (22) International Filing Date: 5 May 2000 (05.05.2000) (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 99/07139 1 June 1999 (01.06.1999) FR (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (for all designated States except US): THOMSON MULTIMEDIA [FR/FR]; 46, quai Alphonse Le Gallo, F-92100 Boulogne-Billancourt (FR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): FURON, Teddy [FR/FR]; Thomson multimedia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR). DUHAMEL, Pierre [FR/FR]; Thomson multimedia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR).
- Published:
— With international search report.
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DIGITAL DATA WATERMARKING SYSTEM USING NOVEL WATERMARK INSERTION AND DETECTION METHODS



(57) Abstract: The watermarking system uses a first series of parameters (v, h), the private key (K_{PRI}), for the insertion of the watermark, and a second series of parameters ($|H(f)|$), the public key (K_{PUB}), for the detection of the watermark, so that knowledge of the public key does not make it possible to know the private key and does not make it possible to delete or modify the watermark. The insertion of the watermark is performed by adding a pseudo random noise sequence (v), filtered by a filter with impulse response (h), to the data to be watermarked. The detection of the watermark is performed by searching through the data received for whether they contain noise which has been filtered by a filter with predefined spectral response ($H(f)$). Application to copy protection.

WO 00/74371 A1

INTERNATIONAL SEARCH REPORT

Intern. Application No.
PCT/EP 00/04053

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N1/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04N G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 766 468 A (NIPPON ELECTRIC CO) 2 April 1997 (1997-04-02) abstract column 6, line 40 -column 9, line 6 ---	1-4,6,7
A	EP 0 840 513 A (NIPPON ELECTRIC CO) 6 May 1998 (1998-05-06) abstract column 3, line 40 -column 4, line 16 column 4, line 49 -column 7, line 22 ---	1-4,6,7
A	US 5 499 294 A (FRIEDMAN GARY L) 12 March 1996 (1996-03-12) abstract ---	5
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

31 July 2000

Date of mailing of the international search report

04/08/2000

Name and mailing address of the ISA
European Patent Office, P.B. 5818 Patentaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Hubeau, R

INTERNATIONAL SEARCH REPORT

Interr Application No

PCT/EP 00/04053

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 5 748 783 A (RHOADS GEOFFREY B) 5 May 1998 (1998-05-05) abstract column 2, line 51 -column 4, line 8 -----</p>	8, 10

INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/EP 00/04053

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0766468	A	02-04-1997	AU 701639 B	04-02-1999
			AU 6584096 A	10-04-1997
			CA 2184949 A	29-03-1997
			JP 9191394 A	22-07-1997
			US 5930369 A	27-07-1999
<hr/>				
EP 0840513	A	06-05-1998	US 5915027 A	22-06-1999
			AU 4434097 A	07-05-1998
			CA 2219205 A	05-05-1998
			JP 10145757 A	29-05-1998
			SG 63773 A	30-03-1999
<hr/>				
US 5499294	A	12-03-1996	NONE	
<hr/>				
US 5748783	A	05-05-1998	AU 6022396 A	29-11-1996
			CA 2218957 A	14-11-1996
			EP 1003324 A	24-05-2000
			EP 0824821 A	25-02-1998
			WO 9636163 A	14-11-1996
			US 5862260 A	19-01-1999
			US 5841886 A	24-11-1998
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PF990030	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 00/ 04053	International filing date (day/month/year) 05/05/2000	(Earliest) Priority Date (day/month/year) 01/06/1999
Applicant THOMSON MULTIMEDIA		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☒ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

4

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PC7/EP 00/04053

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N1/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04N G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 766 468 A (NIPPON ELECTRIC CO) 2 April 1997 (1997-04-02) abstract column 6, line 40 -column 9, line 6 ---	1-4,6,7
A	EP 0 840 513 A (NIPPON ELECTRIC CO) 6 May 1998 (1998-05-06) abstract column 3, line 40 -column 4, line 16 column 4, line 49 -column 7, line 22 ---	1-4,6,7
A	US 5 499 294 A (FRIEDMAN GARY L) 12 March 1996 (1996-03-12) abstract ---	5
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

31 July 2000

Date of mailing of the international search report

04/08/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Hubeau, R

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 00/04053

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 748 783 A (RHOADS GEOFFREY B) 5 May 1998 (1998-05-05) abstract column 2, line 51 -column 4, line 8 -----	8, 10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 00/04053

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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